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(54) **RECONFIGURABLE ELECTROMAGNETIC INTERFERENCE FILTER NETWORK**

(57) An EMI filter network may be used to provide interference filtering for multiple loads (referred to collectively as a dynamic load). In one aspect, the EMI filter network includes electrical switches that establish different configurations or arrangements of passive circuit elements (e.g., inductors and capacitors) where each configuration generates a different filter value. The EMI filter network may be communicatively coupled to a controller which changes the configuration of the EMI filter network

using the switches in response to the dynamic load changing operational states. For example, each configuration of the EMI filter network may correspond to one of the operational states of the dynamic load. Thus, as the operational state of the dynamic load changes - e.g., different motors become operational - the controller alters the configuration of the EMI filter network to provide a filter value that corresponds to the current operational state of the dynamic load.

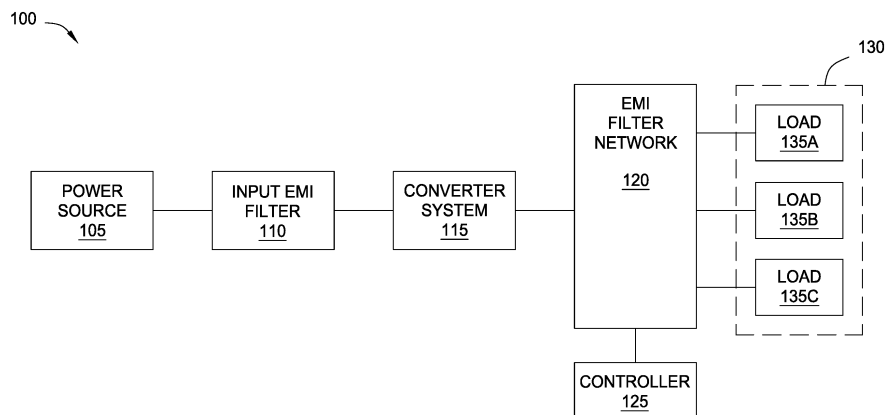


FIG. 1

EP 3 091 660 A3



PARTIAL EUROPEAN SEARCH REPORT

Application Number

under Rule 62a and/or 63 of the European Patent Convention.
This report shall be considered, for the purposes of subsequent proceedings, as the European search report

EP 16 16 7910

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2005/128215 A1 (HWANG YONG-SANG [KR]) 16 June 2005 (2005-06-16) * figure 4 *	1-13,15	INV. H03H1/00 H03H7/01 H03H7/075
X	US 2006/232358 A1 (JEDELOO PIETER W [NL]) 19 October 2006 (2006-10-19) * figure 3 *	1-13,15	
			TECHNICAL FIELDS SEARCHED (IPC)
			H03H H02M H02J
INCOMPLETE SEARCH			
The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.			
Claims searched completely :			
Claims searched incompletely :			
Claims not searched :			
Reason for the limitation of the search: see sheet C			
Place of search		Date of completion of the search	Examiner
The Hague		10 January 2017	Radomirescu, B-M
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03.02 (P04E07)

**INCOMPLETE SEARCH
SHEET C**Application Number
EP 16 16 7910

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Claim(s) completely searchable:
1-13, 15

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Claim(s) not searched:
14

Reason for the limitation of the search:

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In accordance with the Rule 62a(1) EPC, the Applicant was invited to indicate the device independent claim (either claim 8 or claim 14) complying with Rule 43(2) EPC on the basis of which the search should be carried out.

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The Applicant chose claim 8.
Therefore claim 14 has not been searched, and the search has been limited to the claims 1-13 and 15.

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ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 16 16 7910

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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10-01-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005128215 A1	16-06-2005	CN 1627249 A	15-06-2005
		JP 2005182792 A	07-07-2005
		KR 20050058693 A	17-06-2005
		US 2005128215 A1	16-06-2005

US 2006232358 A1	19-10-2006	AT 456194 T	15-02-2010
		CN 1826735 A	30-08-2006
		EP 1649605 A1	26-04-2006
		JP 4422724 B2	24-02-2010
		JP 2006528448 A	14-12-2006
		KR 20060038455 A	03-05-2006
		TW I379529 B	11-12-2012
		US 2006232358 A1	19-10-2006
WO 2005008908 A1	27-01-2005		
